THURSDAY, OCTOBER 25, 1877

SCIENTIFIC WORTHIES

XI.—Sir Joseph Dalton Hooker

SIR JOSEPH DALTON HOOKER,[1] Director of the Royal Gardens, Kew, and President of the Royal Society—the second and only surviving son of the late Sir William Jackson Hooker, who first made the name illustrious in botany—was born at Halesworth, in Suffolk, on June 30, 1817. He was educated at the University of Glasgow, where the father was Regius Professor of Botany from 1820 to 1840, and where the son took the degree of M.D. in 1839. He has since been affiliated to the great English Universities, receiving in the same year the honorary degrees of D.C.L. at Oxford, and of LL.D. at Cambridge, and subsequently that of LL.D. at his own University of Glasgow. Immediately on completing his medical studies, namely in 1839, he was commissioned Assistant-Surgeon in the Royal Navy, and appointed botanist of the antarctic voyage of exploration by the *Erebus* and *Terror*, under the command of Captain, afterwards Sir James Clark Ross. This celebrated expedition, leaving England in the autumn of 1839, and touching at Madeira, Teneriffe, Cape Verde Islands, St. Helena, and the Cape of Good Hope, entered, in the spring of 1840, upon its special work of antarctic exploration, which, including visits to Kerguelen Island, New Zealand, Australia, Fuegia, and the Falkland Islands, occupied the ensuing three years, years of severe labour and much hardship, but of opportunities such as probably never before fell to the lot of a young naturalist, or were ever turned to better account.

The botanical fruits of this expedition are mainly garnered in the "Flora Antarctica," the "Flora Novæ Zelandiæ," and the "Flora Tasmanica," six quarto volumes, the last of which appeared in the year 1860. These do not contain mere reports of explorations, with descriptions of whatever was novel or of peculiar interest, but are systematically elaborated and complete floras, in which all that had been gathered from every source is incorporated. The excellent analyses of the plants, and in particular those of the cryptogams, are for the most part from the author's own drawings, many of them made during the progress of the voyage.

During the preparation of the first of this series of floras, Sir J. D. (then Dr.) Hooker, being then attached to the Geological Survey of Great Britain, brought out several important papers upon points in fossil botany. They need not be here particularly enumerated, but they attracted much attention, and evinced remarkable aptitude for dealing with a difficult class of questions.

In the interval between the publication of the second volume of the "Flora Antarctica," in 1847, and the first volume of the "Flora Novæ Zealandiæ," in 1853, Sir J. D. Hooker, aided by Government, but mainly on his private resources, accomplished his botanical mission to India. A general account of this undertaking is given in his "Himalayan Journals; or, Notes of a Naturalist in Bengal, the Sikkim and Nepal Himalayas, the Khasia Mountains," &c., in two volumes, 8vo., 1854.

His journey occupied three and a half years, and was not without hardship and adventure. After spending two seasons in exploring geographically and botanically the loftiest Himalayan mountains and valleys, unaccompanied by any European, he was, when on the Tibetan frontier, joined by his friend, Dr. Campbell, the political agent resident in a neighbouring British province; this led to the capture of both by the Rajah of Sikkim, and they were imprisoned for some weeks, during which time they were treated with great indignity and their lives were threatened. During his journey in Sikkim he made a survey of the whole country and the bordering districts of Nepal, from the plains of India to Tibet; this was published by the Trigonometrical Survey Office of Calcutta, and is still the standard map of the country. It is a curious fact that though nearly thirty years have elapsed since Sir J. D. Hooker was in the country, many of the trans-Himalayan passes which he then discovered and measured have not since been visited by any other traveller.

Of the scientific results, the first fruits were given to the world in various papers communicated to the Asiatic Society of Bengal; these were followed by the "Rhododendrons of the Sikkim Himalayas," a folio, with splendid illustrations from the author's own pencil; and in a volume of the "Flora Indica," by himself and his friend and schoolmate, Dr. Thomas Thomson. A series of papers upon certain groups, or discussing special points, followed later; and at length the systematic elaboration of Indian botany has been hopefully renewed, and the "Flora of British India," upon the model of the "British Colonial Floras," has reached the second volume. Although "assisted by other botanists," some of the ablest of these died before their contributions were completed, and a large part of the labour and responsibility has devolved upon Sir J. D. Hooker.

In 1869 Sir J. D. Hooker held the presidency of the British Association at Norwich. In his address he advocated the recognition of the Darwinian hypothesis as the best means of advancing the study of the natural sciences, and dwelt at length on the subject of provincial museums, showing by what means they can be rendered both instructive to the general public and be adapted to the needs of scientific men.

On an earlier occasion, at the meeting of the Association at Nottingham in 1866, he was selected to give one of the two public lectures that form part of the programme at these annual meetings. Choosing "Insular Floras" for his subject he gave the results of his own wide personal experience in a discourse which attracted much attention on account of the soundness of the views he advocated and the originality of the illustrations by which he supported them.

Of special memoirs, such as test a botanist's capabilities, four of Sir J. D. Hooker's are particularly noteworthy. These are, in the order of publication; first, the essay "On the Structure and Affinities of Balanophoreæ," a peculiar and puzzling group of phænogamous root-parasites, here for the first time well investigated upon sufficient material, admirably illustrated, and their affinities acutely discerned. The second is a shorter paper "On

[1] Since these lines were written her Majesty has signified her appreciation of Dr. Hooker's services, especially those in relation to the Indian Empire, by conferring upon him the honour of Knight Commander of the Star of India.—A. G.

The fine weather prevailing this month and during part of September allowed me to maintain long watches for shooting stars as follows :—

September	4	watched during	4½	hours and saw	37	meteors.
,,	5	,,	,,	3½	,,	,,	33	,,
,,	7	,,	,,	4	,,	,,	38	,,
,,	15	,,	,,	4½	,,	,,	58	,,
,,	16	,,	,,	4½	,,	,,	59	,,
October	2	,,	,,	4½	,,	,,	37	,,
,,	3	,,	,,	4½	,,	,,	35	,,
,,	4	,,	,,	5	,,	,,	55	,,
,,	5	,,	,,	4¼	,,	,,	31	,,
,,	8	,,	,,	10	,,	,,	105	,,
,,	16	,,	,,	5	,,	,,	83	,,
,,	17	,,	,,	3¼	,,	,,	70	,,

Giving an aggregate watch of 57 hours and 641 meteors visible for September 4–October 17; but this merely relates to a portion of the work, for I have only included in this list those nights when I watched for long periods together.

From these numerous observations I was enabled to deduce many radiant points, and have selected a few of the most important :—

No.	Date.	R.A.	Dec.		No. of ⅄'s.		Max. dates.
		°	°				
1.	September	61	+ 36	...	15 meteors	...	Sept. 7 and 15
2.	Sept. and Oct.	85	+ 54	...	26 ,,	...	Sept. 5 and Oct. 5
3.	Sept. and Oct.	109	+ 38	...	20 ,,	...	October 8
4.	Sept. and Oct.	220	+ 78	...	18 ,,	...	September 15
5.	Sept. and Oct.	60	+ 85	...	15 ,,	...	October 2-8
6.	September	87	+ 34	...	10 ,,	...	September 16
7.	Sept. and Oct.	103	+ 12	...	27 ,,	...	October 8
8.	October	133	+ 79	...	22 ,,	...	October 3-4
9.	October	310	+ 77	...	17 ,,	...	October 3-4
10.	October	225	+ 52	...	10 ,,	...	October 2
11.	October	133	+ 21	...	18 ,,	...	October 15
12.	October 15-20	92	+ 15	...	57 ,,	...	October 18

The last position is that of the well-known October shower, the *Orionids*. Several of the above radiants are probably new, and it is noteworthy that No. 8 agrees very closely with the radiant and date (R.A. 134°, 77° Dec. N., October 7 +) of Comet II., 1825, as calculated by Prof. A. S. Herschel.

Ashleydown, Bristol, October 22 W. F. DENNING

A METEOR of unusual brilliancy was seen by the passengers in the train from Exeter to Bristol, about 6·15 P.M. yesterday. The train was at the time about two or three miles south of Weston Junction. As nearly as I could judge, the meteor made its first appearance at an altitude of about 35°, and 4° or 5° south of west, and moved rapidly towards the horizon almost in a vertical line. The colour was a greenish white, and the train lasted about fifteen seconds. JOHN L. MCKENZIE

Independent College, Taunton, October 20

LAST Friday evening (October 19) we in Aberystwith saw a very beautiful meteor. It was ten minutes past six in the evening, when as I was walking along the shore and looking seaward (west), I saw the meteor rapidly descending as a pear-shaped body of red, yellow, and purple light, increasing much in brightness till it reached about twenty feet, as it looked, from the sea surface, when it suddenly and completely disappeared. Its track seemed a part of it—a tail to it—being at first a pale golden light continuous with the body of the meteor below, extending vertically up and ending rather abruptly above.

This narrow band of light lived complete for a short time, but after one minute most of the track had become a white or slightly grey fleecy cloud about a foot broad and three yards long, as it appeared, only its central part remaining bright as a golden nucleus to the cloud.

By two minutes atmospheric currents had bent the vertical cloud into an arc, the extremities turned to the north with the bright nucleus still distinct. Gradually the nucleus disappeared, but the cloud was still visible for a quarter of an hour, when the increasing dusk of the evening helped to obscure it.

Its course appeared exceedingly rapid, and the brightness was such that a passer-by who did not see the meteor itself, said that the place was lit up "like lightning."

Weather dull and wet, but Friday evening was fine.

University College of Wales, WALTER KEEPING

Aberystwith, October 20

Curious Phenomenon during the Late Gale

THE following may perhaps be of interest to your readers. At about 6·50 P.M. on the night of Sunday the 14th inst., I was walking in a south-easterly direction through the village of Lower Tooting, when I suddenly saw fall from the sky what looked like a huge ball of green fire. What struck me especially was its size, its vivid colour, and also the strange noiselessness of its fall. It seemed to come from a part of the sky somewhere near where Jupiter was then visible, and to fall not a hundred yards from me. This, I fear, is the most accurate information I can give. It took me so completely by surprise that I rubbed my eyes and wondered whether I had not been dreaming, a supposition which seemed to be supported by the indifference displayed by the numerous passers-by in the face of so extraordinary a phenomenon. Indeed I should hardly have thought seriously of the matter again had I not heard of a letter in the *Times* last Monday, describing a very similar phenomenon observed at Brixton some twenty minutes later on the same evening. This and other reports of a like nature, which seemed to imply that the atmosphere was in a somewhat unusual condition, before and during last week's storm, led me to think it worth while to lay before you, and if it so pleases you, before the readers of NATURE, what I at any rate have a strong conviction that I saw on the night in question. G. A. M.

Wine-Coloured Ivy

THE question has been discussed of late whether the ancient Greeks had an acute and true sense of colour. I remember once to have seen the remark that Sophocles shows his want of colour-sense by speaking of wine-coloured ivy. Now this really shows how true his perception of colour was. I inclose two ivy leaves which I have gathered to-day off a wall; I could have gathered plenty of the same colour, which, as you will see, is claret colour.

JOSEPH JOHN MURPHY

Old Forge, Dunmurry, co. Antrim, October 21

OUR ASTRONOMICAL COLUMN

THE SATELLITES OF MARS.—In No. 2,161 of the *Astron. Nach.*, Prof. Asaph Hall has published his measures of both satellites from the dates of their discovery to September 16, though the observations are not completely reduced, differential refraction and the small corrections to refer the measures to the true centre of the planet or the corrections for the gibbous phase having yet to be applied. Prof. Hall intends to make a thorough discussion of the observations taken during the present opposition, and requests other astronomers to forward to him, at Washington, copies of any they may succeed in making.

Subjoined are a few positions of the inner satellite calculated from elements which represent roughly Prof. Hall's observations from August 17 to September 16, as the following selected dates will show :—

		Error in Pos.		Error in Dist.		Observed Pos.
		°		″		°
Aug. 17	...	− 1·1	...	+ 2·1	...	73
,, 26	...	+ 3·5	...	− 2·7	...	253
Sept. 1	...	− 2·0	...	− 2·5	...	250
,, 4	...	− 1·1	...	+ 1·7	...	69
,, 14	...	− 1·5	...	+ 1·2	...	67

There is perhaps a sensible ellipticity of orbit. The period adopted is 7h. 39m. 13s.

For the outer satellite the elements used for the last ephemeris in this column have been again employed; they agree closely with measures taken by Mr. Common at Ealing on October 16. It appears probable that Mr. Common saw the inner satellite about 9 P.M. on October 17, the calculated and estimated positions sufficiently according.

	Inner Satellite.					*Outer Satellite.*			
h. G.M.T.					″				″
Oct. 26	...	Pos.	152	...	Dist. 9	Pos.	91	...	Dist. 44
,, 27	...	,,	91	...	,, 17	,,	213	...	,, 31
,, 28	...	,,	69	...	,, 22	,,	250	...	,, 55
,, 29	...	,,	37	...	,, 12	,,	324	...	,, 22
,, 30	...	,,	306	...	,, 10	,,	64	...	,, 51
,, 31	...	,,	263	...	,, 19	,,	103	...	,, 33
Nov. 1	...	,,	242	...	,, 20	,,	224	...	,, 34
,, 2	...	,,	194	...	,, 9	,,	262	...	,, 47